

DRAFT USE ATTAINABILITY ANALYSIS FOR REC-1 BENEFICIAL USES OF BALLONA CREEK AND WATER QUALITY OBJECTIVE CHANGE



APRIL 4, 2003

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

LOS ANGELES REGION

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1. INTRODUCTION

Section 101(a)(2) of the Clean Water Act (CWA) states that “it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983”. This formed a broad basis for the beneficial use designations for surface waters of the State. In addition to this consideration, a comprehensive review of existing data and solicited input from stakeholders was conducted in the early 1970s to determine the existing and potential beneficial uses for the waters of Los Angeles River Basin. These were the bases for the beneficial uses as designated as in the 1975 Water Quality Control Plan – Los Angeles Region (Basin Plan). Data and reports for this assessment were obtained from California Departments of Health, Fish and Game, Conservation, and Water Resources, as well as the Southern California Association of Governments, County of Los Angeles, Los Angeles County Flood Control District, and various regional and local water agencies. Comments received from public agencies, public utilities, industrial organizations, water companies and private citizens, were also considered (CRWQCB, 1975). Beneficial uses identified included existing and potential water contact recreation (REC-1) for all waters in the region.

The 1994 Basin Plan preserved these beneficial uses. Recently, however, the validity of assigning REC-1 uses to engineered storm channels where access is prohibited or restricted for public safety reasons has been questioned by public agencies such as the Los Angeles County Department of Public Works (LACDPW). LACDPW has also expressed concerns regarding the potential for such beneficial use designations to encourage and protect recreational activities in areas that are unsafe.

Engineered storm channels are constructed to reduce the incidence of flooding in urbanized areas by conveying stormwater runoff to the ocean as efficiently as possible. To accomplish this goal, the waterways are usually lined, at the bottom and on the sides, with rip-rap or concrete. This modification creates “swiftwater” conditions during and

immediately following rain events. The vertical walls and/or steep-sided slopes of these channels, in conjunction with restrictive fencing, usually limit, or at least minimize, direct access to channelized creeks and streams for the purpose of recreational use. Ballona Creek, which is situated in the Santa Monica Bay Watershed in Los Angeles County, is one of such engineered channels. The U.S. Army Corps of Engineers converted it from a natural creek to a concrete-lined flood protection channel in the 1930s. Since then public access has been restricted and recreational use limited. Despite this, in 1975 the creek, upstream of the estuary, was designated for secondary contact (REC-2) and potential primary contact (REC-1) uses. The Regional Board is assessing whether this potential REC-1 use can be attained in this portion of Ballona Creek; and will consider removing or amending this designation based on the results of this use attainability analysis (UAA). This analysis is designed to address the Clean Water Act swimmable goal included in the REC-1 designation. Such a determination is timely, since a bacteria Total Maximum Daily Load (TMDL) is currently in development for Ballona Creek.

2. BACKGROUND

2.1 Physical Description of Ballona Creek

Ballona Creek flows as an open channel for just under 10 miles from Los Angeles (South of Hancock Park) through Culver City, reaching the Pacific Ocean at Playa del Rey.

Except for the estuarine section of the creek, which is composed of grouted rip-rap side slopes and an earth bottom, Ballona Creek is entirely lined in concrete and extends into a complex underground network of storm drains which reaches north to Beverly Hills and West Hollywood. Tributaries of the creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous other storm drains (Figure 1). All of these tributaries are concrete lined channels that lead to covered culverts upstream.

The Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan) defines three sections of the creek based on hydrologic units. The section referred to as “Ballona Creek” (Reach 1) is a 2-mile stretch from Cochran Avenue to National Boulevard. “Ballona Creek to Estuary” (Reach 2) is the longest segment of the creek (approximately 4 miles) continuing on from National Boulevard and ending at Centinela Avenue where the estuary begins. “Ballona Creek Estuary” continues to the Pacific Ocean for 3.5 miles and its lower portion runs parallel to the main channel of Marina del Rey (Figure 1).

2.2 Designated Beneficial Uses in Basin Plan

The existing and potential uses of Ballona Creek and Estuary are listed in Table 1. The Basin Plan defines recreational beneficial uses as follows:

REC-1 Water Contact Recreation: “Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to swimming, wading, water skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.”

Table 1. Beneficial Uses of Ballona Creek and Estuary

BALLONA CREEK WATERSHED	HYDRO UNIT #	MUN	NAV	REC1	REC2	COMM	WARM	EST	MAR	WILD	RARE	MIGR	SPWN	SHELL
Ballona Creek Estuary	405.13		E	E	E	E		E	E	E	Ee	Ef	Ef	E
Ballona Creek to Estuary	405.13	P*		Ps	E		P			P				
Ballona Creek	405.15	P*		Ps	E		P			E				

Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

E: Existing beneficial use

P: Potential beneficial use

s: Access prohibited by Los Angeles County DPW

e: One or more rare species utilize all oceans, bays, estuaries, and wetlands for foraging and/or nesting.

f: Aquatic organisms utilize all bays, estuaries, lagoons, and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas that are heavily influenced by freshwater inputs.

* Asterixed MUN designations were designated under SB 88-63 and RB 89-03. However, conditional designations are not recognized under federal law and are not subject to water quality objectives set to protect the MUN use until further study is undertaken. (See Letter from Alexis Strauss [USEPA] to Celeste Cantú [State Board], Feb. 15, 2002.)

This is an existing beneficial use of the estuary and a potential use for the “Creek” and “Creek to Estuary”. The potential REC-1 use upstream of the estuary is the focus of this analysis.

REC-2 Non-contact Water Recreation: “Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to picnicking, sun-bathing, hiking, beach-combing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities”. This is an existing beneficial use for all three sections of the creek.

Existing beneficial uses refer to those “those beneficial uses that have been attained for a waterbody on, or after, November 28, 1975 (CRWQCB, 1994).

Potential use designations are based on a number of factors including

- i. plans to put the water to such future use,
- ii. potential to put the water to such future use,
- iii. designation of a use by the Regional Board as a regional water quality goal, or
- iv. public desire to put the water to such future use (CRWQCB, 1994).

This staff report is made up of three main sections:

- (1) a review of relevant regulations and policies governing UAAs and requirements for REC-1 de-designation,
- (2) an assessment of the existing and potential recreational uses of the creek, and
- (3) a presentation of alternative beneficial-use designations and their implications.

3. POLICY REVIEW

3.1 Designation of Beneficial Uses

According to 40 CFR§ 131.3 (f), designated uses are those uses specified in water quality standards for each water body or segment whether or not they are being attained. As previously mentioned, Section 101(a)(2) of the Clean Water Act (CWA) says, “it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983”.

40 CFR §131.10 directs States on the designation of uses:

(a) Each State must specify appropriate water uses to be achieved and protected. The classification of the waters of the State must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. In no case shall a State adopt waste transport or waste assimilation as a designated use for any waters of the United States.

(b) In designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall provide for the attainment and maintenance of the water quality standards of downstream waters.

(c) States may adopt sub-categories of a use and set the appropriate criteria to reflect varying needs of such sub-categories of uses, for instance, to differentiate between cold water and warm water fisheries.

(d) At a minimum, uses are deemed attainable if they can be achieved by the imposition of effluent limits required under sections 301(b) and 306 of the Act and cost-effective and reasonable best management practices for nonpoint source pollution.

3.2 Removal of Designated Uses: 40 CFR § 131.10 (g)

States may remove a designated use which is not an existing use, as defined in § 131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:

1. Naturally occurring pollutant concentrations prevent the attainment of the use; or
2. Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met: or
3. Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
4. Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or
5. Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses or
6. Controls more stringent than those required by sections 301(b) [Effluent Limitations] and 306 [National Standards of Performance] of the Act would result in substantial and widespread economic and social impact.

Restrictions on Removal of Use: 40 CFR § 131.10

Federal regulations restrict States from removing designated beneficial uses. Specifically 40 CFR § 131.10 (h) prohibits States from removing designated uses if:

1. They are existing uses, as defined in 40 CFR § 131.3, unless a use requiring more stringent criteria is added; or
2. Such uses will be attained by implementing effluent limits required under sections 301(b) and 306 of the Act and by implementing cost-effective and reasonable best management practices.

Furthermore, 40 CFR § 131.10 (i) states that where existing water quality standards specify designated uses less than those which are presently being attained, the State shall revise its standards to reflect the uses actually being attained.

3.3 Use Attainability Analyses

40 CFR § 131.3 (g) defines a Use Attainability Analysis (UAA) as a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in § 131.10(g).

Under section 40 CFR § 131.10 (j) of the Water Quality Standards Regulation, States are required to conduct a UAA whenever the State wishes to remove a designated use that is specified in section 101(a)(2) of the Act or adopt subcategories of uses specified in section 101(a)(2) that require less stringent criteria.

USEPA (2002) provides guidance on conducting UAAs for Recreational Use and provides the following factors that may be addressed:

- (i) Physical analyses considering the actual use (as of November 28, 1975), public access to the waterbody, facilities promoting the use of recreation, proximity to residential areas, safety considerations, and substrate, depth, width, etc. of a waterbody;
- (ii) Chemical analyses of existing water quality;
- (iii) Potential for water quality improvements including an assessment of nutrients and bacteriological contaminants; and
- (iv) Economic affordability analyses.

On the subject of physical analyses, EPA has previously stated that, “Physical factors, which are important in determining attainability of aquatic life uses, may not be used as the basis for removing or not designating a recreational use consistent with the CWA section 101(a)(2) goal. This precludes States from using factor 2 (low flows) or factor 5 (physical factors in general) as the sole basis for determining attainability of recreational

uses. The reason for this preclusion is that States and USEPA have an obligation to do as much as possible to protect the health of the public. In certain instances, people will use whatever water bodies are available for recreation, regardless of the physical conditions (USEPA, 1994).

More recently, USEPA considered whether the regulation or Agency guidance should be amended to allow consideration of physical factors, alone, as the basis for removing, or not designating primary contact recreational uses (USEPA, 1998).

USEPA's suggested approach to the recreational use issue is for States to look at a suite of factors such as whether the water body is actually being used for primary contact recreation, existing water quality, water quality potential, access, recreational facilities, location, proximity to residential areas, safety considerations, and physical conditions of the waterbody in making any use attainability decision (USEPA, 1994).

In October 2002, the California State Water Resources Control Board (SWRCB) reviewed its decision concerning the City of Vacaville's (Vacaville) dispute of the Central Valley Regional Boards' (CVRB) application of REC-1 and other water quality objectives in crafting the 2001 permit for the Easterly Wastewater Treatment Plant discharge to Old Alamo Creek. The CVRB had applied REC-1 and other uses to the creek via the "Tributary Rule." Vacaville contended the CVRBs' approach to designating beneficial uses as well as the existence of specific uses (including REC-1) in Old Alamo Creek. Vacaville had conducted a receiving water survey in the Fall of 1997 and concluded that REC-1 was not an existing use of the creek. In contrast, CVRB determined that the public has access to the creek, which runs by homes and provides riparian habitat that could attract users. CVRB staff also found evidence of fishing in the creek, and received accounts of wading from nearby residents who were interviewed. Based on these findings, the SWRCB determined that REC-1 was an existing use of the waterbody (SWRCB, 2002).

4. BENEFICIAL USE ASSESSMENT

Regional Board staff conducted a beneficial use assessment of Ballona Creek during the period of March to August 2002. Reconnaissance field visits were made in March, May, and July and a more rigorous survey was conducted throughout the month of August 2002. The assessment consisted of field visits, including visual observations, photo documentation, water level measurements, a recreational use survey of people encountered along the creek, analysis of flow and water-level data, and an e-mail survey of watershed stakeholders.

4.1 Methods

Data Collection and Analysis: Water level data were obtained from the Los Angeles County Department of Public Works (LACDPW). These data spanned a period of five storm years from 1996/97 to 2000/01 and were recorded in 15-minute intervals. Average daily values were derived from this data set. Flow data were obtained directly from the LACDPW website. Both water level and flow data were collected at the County's gage station (F 38C-R) in Ballona Creek at Sawtelle Boulevard, which is about one mile upstream from the estuary. In addition, on two occasions in August 2002, water level measurements were taken by Regional Board staff at seven different sites along the creek from its starting point to the beginning of the estuary. This was accomplished by taking in-stream measurements with a yardstick approximately every five feet along the channel width at each site.

Fieldwork: Regional Board staff went to the creek on seven occasions between March and August 2002. During this period photo documentation of the conditions within, and the activities in and around the creek was conducted. A recreational use survey questionnaire was developed to identify other uses that staff did not observe during the field visits. This questionnaire was distributed among users of the bike path adjacent to the creek during four site visits on August 2, 16, 23, and 29, 2002. A total of thirty-three questionnaires were returned to Board staff. Copies of the returned surveys are provided in Appendix A hereto. In addition, Regional Board staff interviewed staff from the

UCLA Marine Aquatic Center located between Ballona Creek and the main channel of Marina del Rey.

E-mail Survey: This survey involved sending e-mails to participants in the Ballona Creek Watershed Task Force (BCWTF) seeking information on known water-contact recreational activities in the creek upstream of the estuary. The Task Force is comprised of public agencies such as LACDPW and cities within the watershed, environmental groups such as Heal the Bay and the Santa Monica BayKeeper, local residents, and staff of the Regional Board, and the Santa Monica Bay Restoration Commission.

4.2 Results

Results of the data collection and analysis, surveys, and field measurements are presented in the following section.

4.2.1 Physical Conditions within the Creek

Water levels: Figure 2 shows the profile of water levels in the creek as it makes its way downstream to the estuary. Ballona Creek at Cochran Avenue is the location where the creek emerges from the network of underground storm channels. The sites were chosen based on accessibility and are located approximately 1, 2, 3, 4 and 4.5 miles downstream. These values represent dry-weather conditions. Water levels along the creek are very low during this period – less than 4 inches throughout, until the estuary.

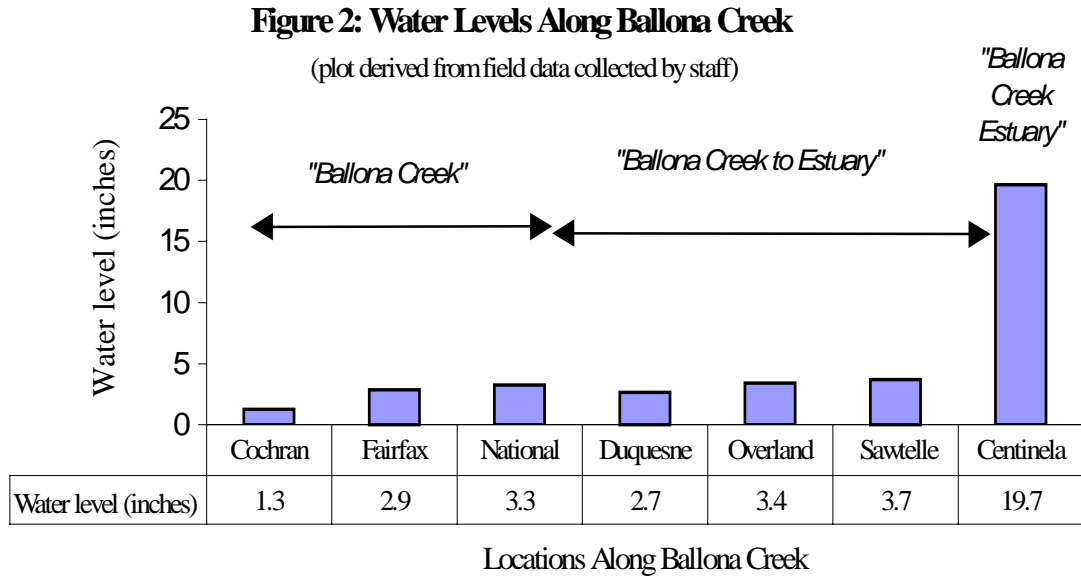


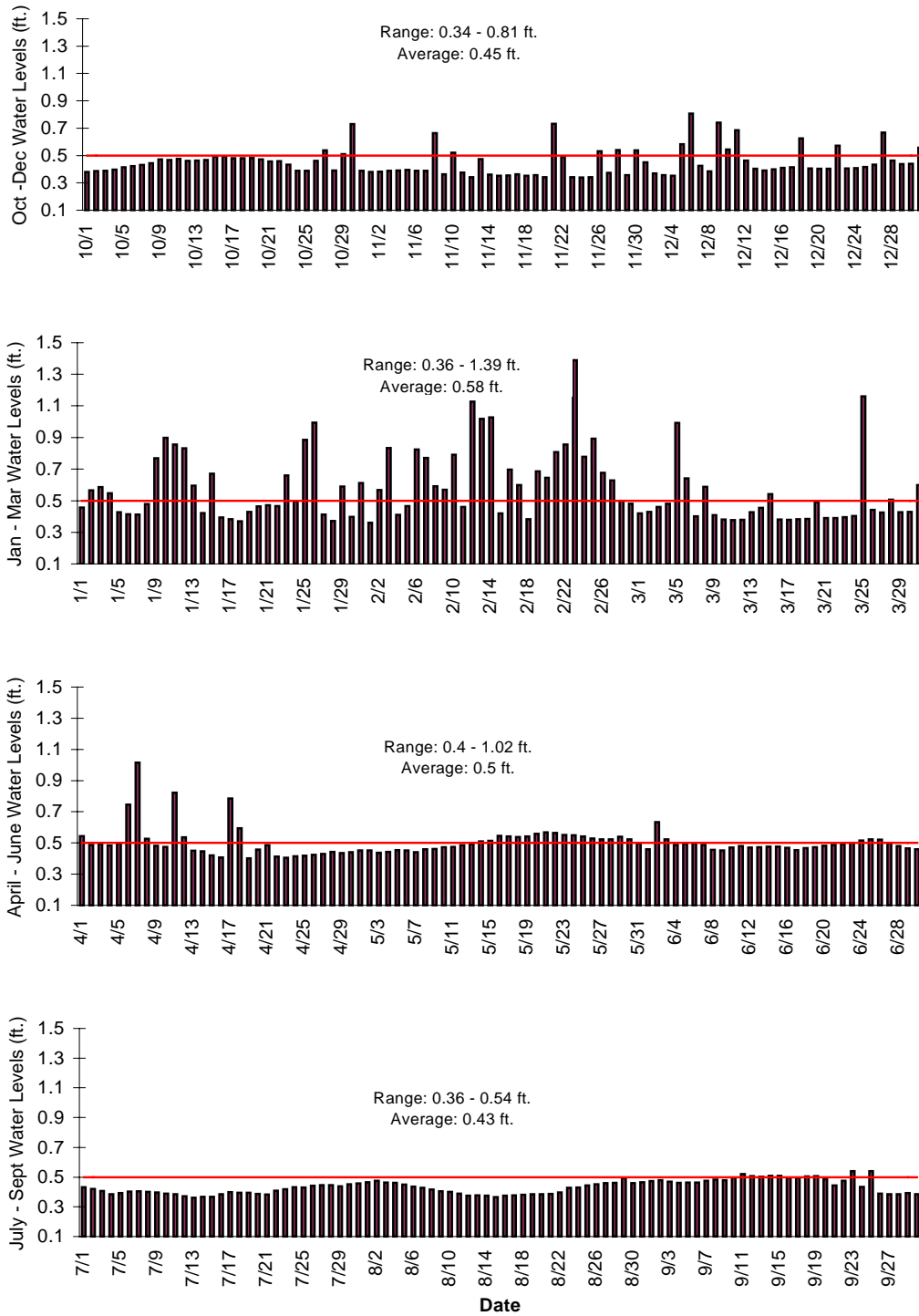
Figure 3 is a series of plots of average daily water levels the 1996/97 to 2000/01 storm year – presented by season. For most of the year it is below six inches (0.5ft). The peaks in water level occur during and soon after storm events.

Flow Volume: The low water levels in the creek are not indicative of the flow in the channel, which is significant even during dry weather. Dry weather flows are estimated at 14 cubic feet per second (cfs) (Ackerman and Schiff, 2001) and can be up to 36000 cfs - for a 100-year storm event (SMBRP, 1997). Figure 4 shows average daily flows in Ballona Creek for the period of 1996/97 to 2000/01. The peaks represent storm events when flows are magnified.

Accessibility:

“Ballona Creek” (Reach-1): Vertical concrete walls line the creek from the point where it emerges from the underground network of drains at Cochran Avenue, in the City of Los Angeles, to National Boulevard in Culver City (Figure 5a-b). This is the segment referred to as “Ballona Creek” in the Basin Plan. These walls, along with the chainlink fencing that runs the length of them (Figure 5a) limit direct public access to this segment of the

Figure 3: Average Daily Water Levels (1996/97- 2000/01) in Ballona Creek at Sawtelle Blvd. (source: LACDPW)



creek. Locked gates along the fencing restrict entry to these areas to the LACDPW and other authorized agencies.

“Ballona Creek to Estuary” (Reach 2): At National Boulevard the vertical walls transition to sloping walls that end in a box culvert at the base of the channel. From this point, a bike path runs adjacent to the creek and then the estuary until it meets the Pacific Ocean in Marina del Rey. Gates in the fencing (Figure 6a) provide access to the bike path and the path is separated from the creek itself by another fence (Figure 6b). At two locations along the bike path -Overland Avenue (Figure 7a), and Sepulveda Boulevard - the separating fence is discontinued and direct access to the creek is possible. People can also come into contact with the water by climbing through or over the separating fence (Figure 7b).

Proximity to Other Structures and Facilities: The creek flows in close proximity to residences, office buildings, parks and other facilities. The bike path can be accessed directly from Syd Kronenthal Park (Figure 8a), and the Culver Slauson Park – both located in Culver City. In addition, Lindberg Park, Culver City Park, and the Mar Vista Gardens are in close proximity to the creek. The Julian Dixon Library (Figure 8b) and the Culver City Middle school, at Overland Boulevard (located in Reach 2), provide access to the bike path through gates in the rear of their facilities. Direct access to the creek is possible from these two facilities since there is a break in the fencing which separates it from the bike path.

Safety Issues: The creek was channeled in order to quickly convey stormwater to the ocean. Therefore during storm events of one (1.0) inch or greater (for unsaturated ground), and one-half (0.5) inch or more (for saturated ground), high-flow high-velocity conditions make it unsafe to be in the immediate vicinity of the creek. This limit is based on the Los Angeles County Multi-Agency Swift Water Rescue Committees’ determination of the potential for flooding, mud and debris flow, and water rescue incidents in the area (LACMSWRC, 1999). Prior to or at the start of storms totaling one

(1.0) inch or more, LACDPW locks all access gates to the bike path to prevent its use by the public (Burke, 2002). Figure 9 shows examples of the sudden changes in water levels experienced during storms of totaling one-half (0.5)-, two (2.0), and three (3.0) inches.

Figure 4: Average Daily Ballona Creek Flow for 196/97 to 2000/01
(source: LADPW).

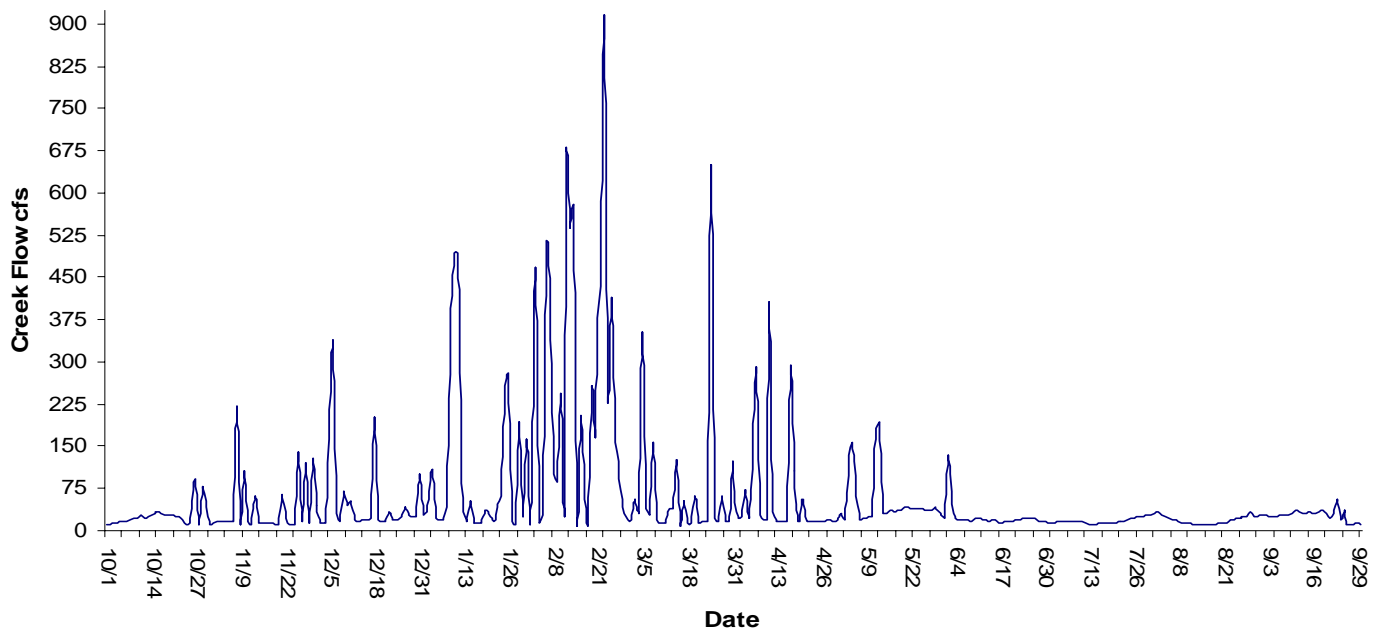




Figure 5a: Vertical channel walls upstream in Ballona Creek at Cochran Avenue in the City of Los Angeles. This is where the creek first daylights from the underground network of stormdrains.



Figure 5b: Ballona Creek at Fairfax Avenue in the City of Los Angeles (1-mile downstream of Ballona Creek at Cochran Avenue). Vertical channel walls and fencing limit access.



Figure 6a: “Ballona Creek to Estuary” at Duquesne Avenue in Culver City – a gate provides access to the bike path. There are other access gates at bridge crossings along the path.



Figure 6b: “Ballona Creek to Estuary” at Duquesne Ave. Fence is meant to keep people out of the creek. Note that the channel walls have become sloped at the top and vertical at the bottom. This change occurs at the beginning of the bike path at National Blvd.



Figure 7a: “Ballona Creek to Estuary” at Overland Ave. - break in fencing makes direct access to Ballona Creek possible. Another break occurs at Sepulveda Blvd.



Figure 7b: People access the creek despite the fencing. At “Ballona Creek to Estuary” at Duquesne Ave., a woman walks a dog in the creek.



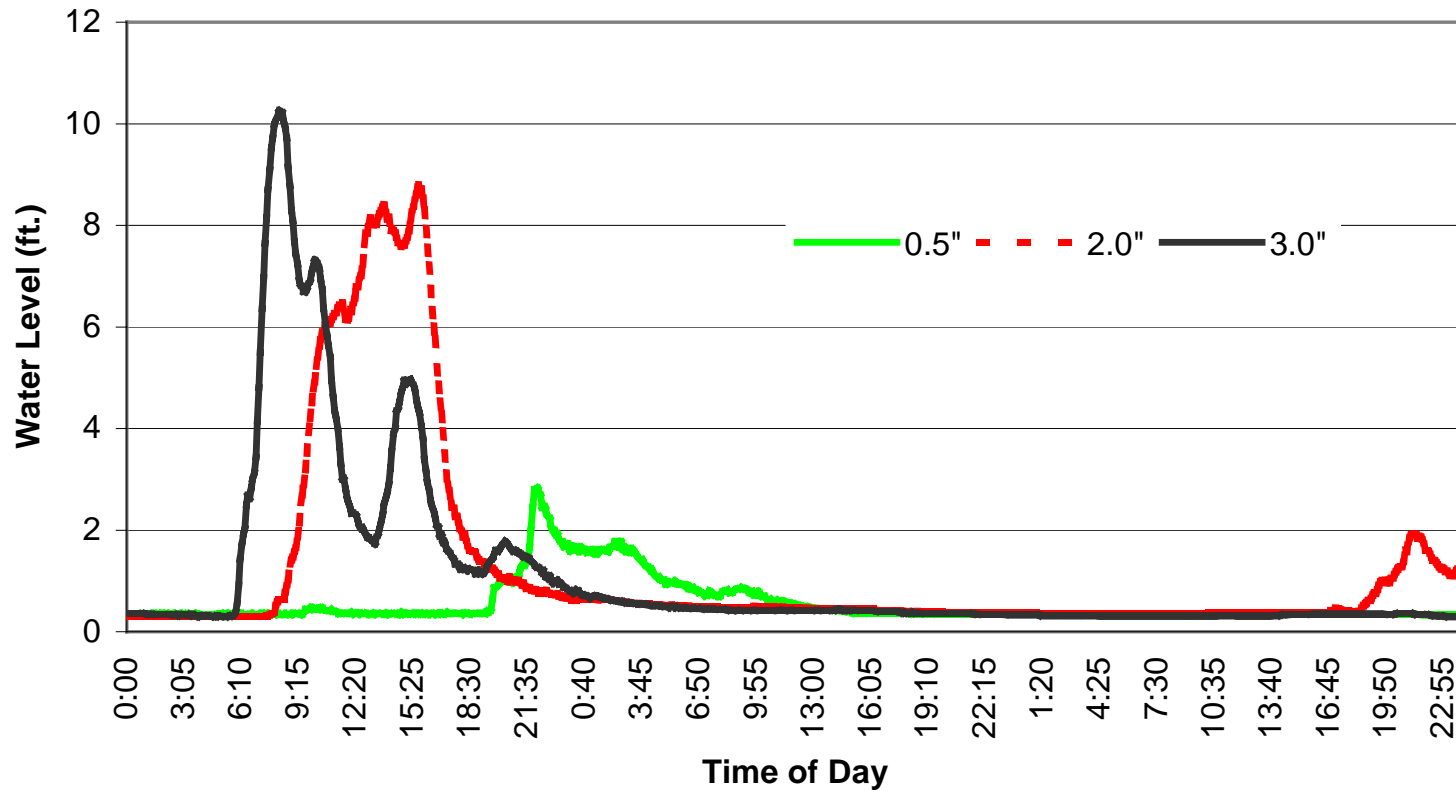
Figure 8a: “Ballona Creek to Estuary” - At National Boulevard in Culver City, the bike path can be accessed directly from Syd Kronenthal Park.



Figure 8b: “Ballona Creek to Estuary” - The bike path and the creek can be accessed from rear of the Julian Dixon Library in Culver City. Here the fencing is discontinued and water contact is possible. Culver City Middle School is adjacent to the library.

Figure 9: Water Levels in Ballona Creek at Sawtelle Boulevard - Before, During & After Rain Events Totaling 0.5-, 2-, and 3-inches.

(Plots derived using data obtained from LADPW (water levels) and SCCWRP (total rainfall)).



4.2.2 Existing Recreational Uses of the Creek

The bike path along the creek provides opportunities for recreation in the area. This path extends almost seven miles from Ballona Creek at National Boulevard in Culver City to the end of Ballona Creek Estuary in Marina del Rey. The bike path is connected to another path along Dockweiler Beach by the Pacific Bridge, which links Marina del Rey to Playa del Rey. Staff observed people biking, walking, jogging, roller-blading, riding scooters, and walking dogs. Also a number of teenagers, frequently observed along the path, informed staff that they used it as a short-cut to and from school. Responses to the questionnaire handed out to users of the bike path listed bird watching, and children playing on the sloped banks as observed activities; in addition to those observed by staff. This facility is mainly used by residents of the area for recreational purposes or as a route to school and is accessed primarily from gates provided by bridge crossings. A summary of the results of this survey is provided in the Appendix A hereto.

The only instance of water contact observed by staff was a woman walking a dog in the creek at Ballona Creek and Duquesne Avenue. However, water contact recreation by children east of Inglewood Boulevard, just upstream of the estuary, was an additional activity reported by the e-survey. Others were dog walking in the creek and at the waters edge, sailing model powerboats, water quality education and monitoring, and creek clean-ups.

4.2.3 Current Recreational Uses of the Estuary

The existing REC-1 use designation of Ballona Creek Estuary is well supported. The bike path that runs adjacent to the estuary supports the same recreational activities that occur along the creek. In addition to these activities, the estuary itself is used for rowing and kayaking. The University of California Los Angeles (UCLA) Marina Aquatic Center (MAC) conducts some of its activities within the estuary. The UCLA rowing program uses the creek approximately 60 to 70 days per year for practice (Figure 10a). Every April, the women's crew team hosts an inter-collegiate crew regatta, the "Miller Cup" on Ballona Creek. This event attracts collegiate teams from the entire West Coast. In June,

the local Masters Rowing Club hosts their “Regatta del Sol” which attracts mainly Southern Californian masters rowing teams.

The UCLA Marine Aquatic Center organizes a kayaking and bird watching program along Ballona Creek Estuary. This event takes place 10 –12 times a year on weekends, and groups of kayakers go upstream of the estuary as far as Centinela Creek. Fishing is another recreational activity that takes place in the estuary- from Centinela Boulevard all the way to the Pacific Ocean (Figure 10b).



Figure 10a: Rowing practice in the Ballona Creek Estuary



Figure 10b: Fishing in the Ballona Creek Estuary –upstream of Pacific Bridge.

4.3 Water Quality Potential for Ballona Creek

Ballona Creek (Reaches 1 and 2) and Estuary are listed as impaired on the 1998 303(d) list due to exceedances of bacteria water quality objectives designed to protect the REC-1 beneficial use. Plots of the data that lead to this listing in both waterbodies are shown in Figure 11a-b. These figures show neither REC-1 nor REC-2 conditions being met in the creek or estuary. More recent data indicate that the creek and estuary are still not meeting REC-1 water quality standards with respect to coliform bacteria. Potential sources of these contaminants include illegal sewer connections, leaking sanitary sewer lines, and urban run-off containing waste from pets. Other pollutants of concern for which the creek and estuary are listed are trash, metals and organics. A trash TMDL has been adopted for the watershed and is in its implementation stage. The TMDLs for coliform bacteria and metals are slated for completion in 2003 and 2004 respectively.

None of the recreational users of the bike path along the creek, interviewed by staff, considered water contact in the creek as an option mainly because of the presence of storm drains (perceived poor water quality) and low water levels.

4.4 Summary

Results of the assessment suggest that physical conditions within “Ballona Creek” and “Ballona Creek to Estuary”, are not capable of supporting REC-1 use for the following reasons:

- (i) Water levels for most of the year – particularly in the dry-weather when recreational use is at its greatest, is insufficient to support activities that could reasonably be expected to result in anything other than incidental ingestion of water.
- (ii) When sufficiently high levels do occur –during periods of storm events, the high flow velocity presents a life-threatening hazard for anyone entering the water.
- (iii) Fencing and the configuration of the channel walls in certain sections, especially in “Ballona Creek” (Reach 1), restrict direct contact with the water in the creek.

These conditions can be classified under §131.10 (g) (2) low water levels, and (4) hydrologic modifications – both of which restrict attainment of REC-1 use.

Figure 11a: 1996 Assessment of Fecal Coliform in Ballona Creek

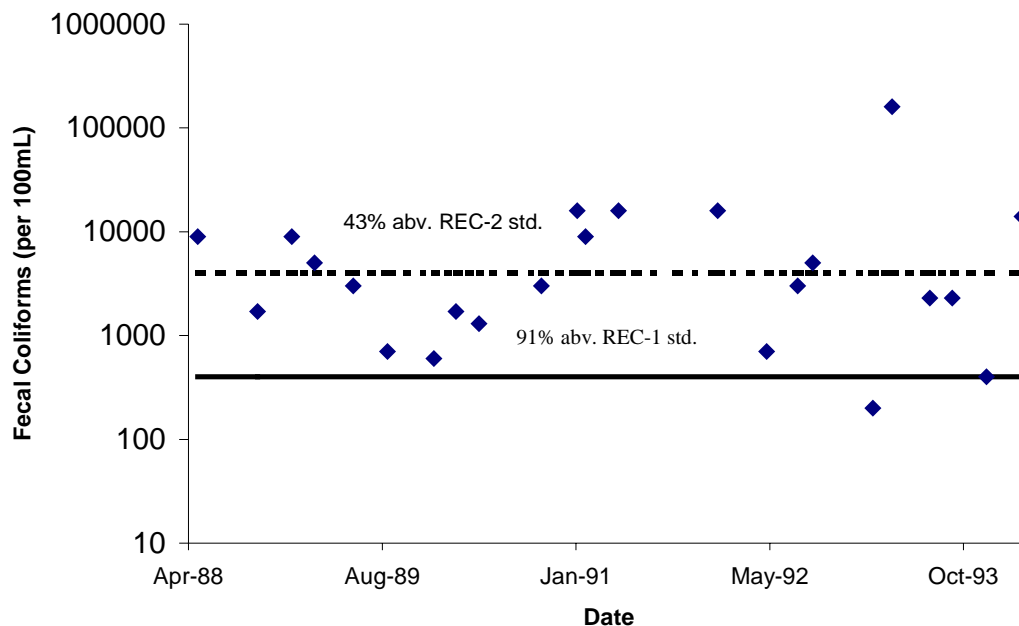
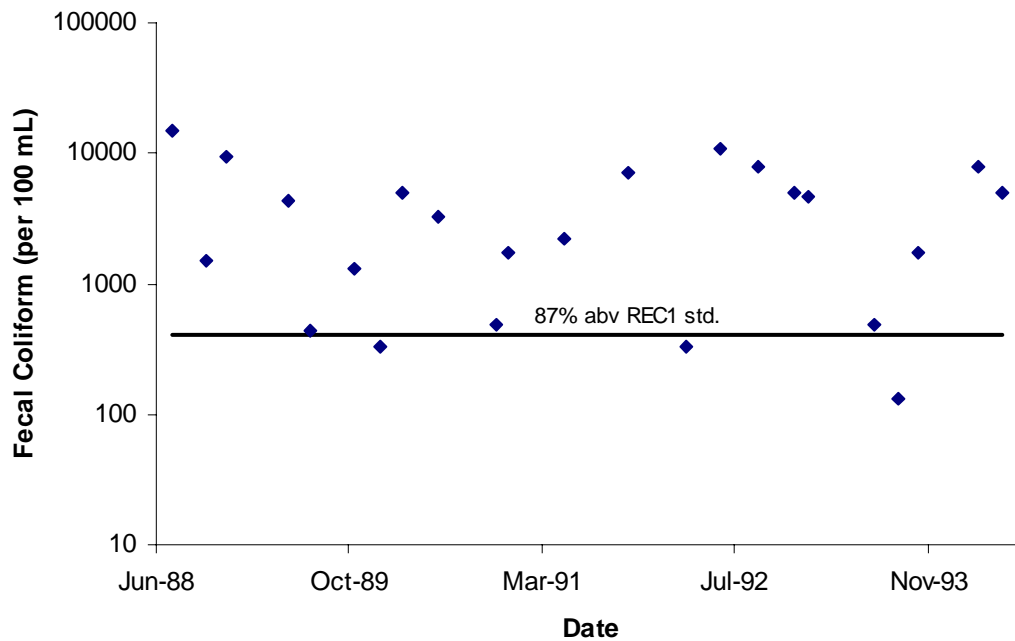


Figure11b: 1996 Assessment of Fecal Coliform in Ballona Creek Estuary



Access to the creek is more restricted in “Ballona Creek” than in “Ballona Creek to Estuary” due to the vertical walls and uninterrupted fencing, which is locked year round. Public access is restricted but not prohibited in “Ballona Creek to Estuary”. The bike path, sloped channel walls, and breaks in the fencing provide limited access to this waterway. The public is therefore able to come into contact with the water in the “Ballona Creek to Estuary” (Reach 2). The potential for incidental water contact does not support a full REC-1 use, particularly since it does not involve swimming and/or a reasonable risk of ingestion. Arguably, such contact is provided for under the REC-2 bacteriological water quality objectives which were developed with the presumption that some accidental contact with water may occur. Based on staff’s visual observations of activities taking place in the vicinity of the Creek and the results of the e-survey, the creek does support REC-2 activities, and limited REC-1 use. In the event that limited water contact recreation occurs in a waterbody that lacks suitable water quality and physical characteristics to support a recreational swimming use now or in the future, USEPA suggests that primary contact recreation may not be an existing use. (USEPA, 1998). In the case of Ballona Creek, the Board may consider modifying the REC-1 use designation to reflect the actual and potential use.

5. ANALYSIS OF ALTERNATIVES

It is clear that Ballona Creek, in its present configuration, has limited potential to support REC-1 use now or in the foreseeable future. This section presents alternative actions that could be taken to modify the recreational beneficial use designation of the creek. In consideration that REC-2 standards would still apply to all reaches, the following alternatives considered are protective of human health in Ballona Creek. Downstream REC-1 uses shall be protected using existing bacteria objectives for water contact recreation. Furthermore, because downstream REC-1 uses are currently listed as impaired for bacteria, a TMDL will establish allocations to protect downstream REC-1 beneficial uses. In addition, pros and cons of each alternative are addressed.

5.1 Alternatives for Modifying Recreational Use Designation

Alternative A: De-designation of potential REC-1 in “Ballona Creek” and maintain potential REC-1 in “Ballona Creek to Estuary”.

The uppermost section of the creek is the two-mile segment referred to as “Ballona Creek” in the Basin Plan. As previously mentioned, access is restricted in this portion of the creek by the vertical channel walls and locked fencing. Physical conditions limit the use of this segment for body contact recreational activity. Downstream of this segment is “Ballona Creek to Estuary” where limited access is provided by a bike path and breaks in fencing between this path and the creek water. This alternative will remove the potential REC-1 designation from the uppermost two-mile segment, while maintaining it in the rest of the creek. It is protective of human health since the upper reach is largely inaccessible to the public. This option may lend some relief to responsible parties implementing TMDLs since REC-1 water quality standards will not apply directly to this segment of the creek. However, REC-2 standards will continue to apply, and more stringent effluent limits, in the municipal storm water permit (MS4), may be applied to the extent necessary to protect the beneficial uses of downstream reaches.

Alternative B:

De-designation of entire creek upstream of the estuary for potential REC-1 use.

This alternative entails the complete removal of the potential REC-1 use designation for “Ballona Creek” and “Ballona Creek to Estuary”. This approach may be justified by the limited opportunities for ingestion due to shallow water depth (see Figure 3) - even when direct contact is made with the water. REC-2 bacteriological standards would still apply (see Table 2). Such an alternative will address the designation of this beneficial use in both reaches upstream of the estuary, while still being protective of human health -since any ingestion of water would be incidental and is expected to occur infrequently – if at all. REC-1 bacteriological standards will not apply in this waterbody until it reaches the estuary. The relaxation of applicable bacteria water quality objectives in these reaches may provide some relief to responsible parties for achieving and maintaining water quality standards in the creek and estuary.

Alternative C:

De-designation of “Ballona Creek” for potential REC-1 use, and subdividing REC-1 in “Ballona Creek to Estuary.”

This alternative would remove the potential REC-1 designation of the “Ballona Creek” segment and modify the potential REC-1 designation in “Ballona Creek to Estuary” to account for incidental water contact in the creek. Specifically, the segment “Ballona Creek to Estuary” would be designated as supporting an existing limited REC-1 use. This sub-category of REC-1 will be termed Limited REC-1 (LREC-1) and defined as “uses of water for recreational activities involving body contact with water where full REC-1 use is limited by physical conditions such as very shallow water depth and restricted access; and as a result, ingestion of water is incidental and infrequent.” This LREC-1 will provide a lower level of protection than the current REC-1 designation based on frequency of use. This approach is consistent with USEPA guidance which suggests allowing higher bacteria limits with decreasing frequency of use in a waterbody (USEPA, 1986). In this guidance document, REC-1 use is sub-divided according to the following qualitative use intensities (i) designated beach area (high frequency), (ii) moderate use,

(iii) lightly used, and (iv) infrequently used; less intensively used areas are allowed less restrictive single sample limits for indicator bacteria densities.

The incidental contact occurring in Reach 2 of Ballona Creek would be classified as “infrequently used” and the applicable bacteriological standards are shown in Table 2.

Table 2: Current and Proposed Water Quality Objectives for Ballona Creek.

Limits	REC-1	Limited REC-1*	REC-2
<i>Geometric Mean</i>			
E. coli	126	126	n.a
Fecal coliform	200	200	2000
<i>Single Sample</i>			
E. coli	235	576	n.a
Fecal coliform	400	n.a*	4000

* Proposed sub-category of REC-1

n.a. Not applicable

n.a* EPA did not recommend limited use criteria for fecal coliform.

LREC-1 geometric mean limits for E. coli and fecal coliform are the same as the REC-1 water quality objectives. However, the LREC-1 single sample limit for E. coli is higher than the REC-1 limit. This is based on EPA’s determination of the most appropriate single sample maximum density for waterbodies infrequently used for full-body contact recreation (see Table 4 in USEPA’s “Ambient Water Quality Criteria for Bacteria – 1986”. Report No. EPA 330/5-84-002, January 1986). A copy of this table is provided in Appendix B hereto.

While these standards are less stringent than the current REC-1 standards, they are more protective than the REC-2 standards. This alternative is justifiable since water levels in these segments are insufficient to support activities with a reasonable probability of water ingestion. It will most accurately protect actual and reasonably foreseeable uses in the creek. Relief to responsible parties for achieving water quality standards will be more limited than that provided in Alternative B.

Alternative D:

No Action - maintain potential REC-1 designation.

For this alternative the potential REC-1 designation will remain in place for the entire creek. Human health concerns will be fully addressed, however the designation will not reflect the actual level of use in the reaches upstream of the estuary, and may be considered to be overly protective.

5.2 Addressing Potential Concerns

It is likely that there may be concern by interested parties on the potential impacts of de-designation of REC-1 for Ballona Creek. The following section presents and discusses possible concerns that may arise.

Downstream uses may be impacted

40 CFR, Part 131.10 (b) states that “in designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall provide for the attainment and maintenance of the water quality standards of downstream waters. The Basin Plan is also clear that upstream water quality must be protective of downstream uses. Ballona Creek flows into Ballona Creek Estuary, which in turn flows into the Santa Monica Bay (SMB). The creek, estuary, and 44 Santa Monica Bay Beaches are all currently impaired for bacteria. Dockweiler Beach is the SMB Beach that is influenced by Ballona Creek Estuary. There may be concern that lowering water quality standards in Ballona Creek may impact Ballona Creek Estuary and Dockweiler Beach.

At present, a bacteria TMDL has been adopted for SMB Beaches and the TMDL for Ballona Creek and Estuary is expected to be completed in 2005. The SMB Beaches Bacteria TMDL sets limits on the number of exceedance days for the beach to which Ballona Creek drains. The Ballona Creek Bacteria TMDL will support this limit. In addition, the TMDL will require REC-1 water quality standards to be attained throughout the estuary. This will ensure that water quality in the estuary and at Dockweiler Beach are not compromised by changes in upstream designations.

The SMB beaches bacteria TMDL offered three potential implementation approaches for meeting the TMDL: 1) an integrated water resources strategy; 2) a targeted upstream structural and non-structural control strategy; and 3) an interim diversion strategy (CRWQCB-LA, 2002). Modification of uses in the upstream use in Ballona Creek will not affect implementation of these strategies.

Higher allowable levels of bacteria may further impair the creek.

There may be concern that de-designating REC-1 could result in higher allowable concentrations of bacteria into Ballona Creek. The current bacteria levels in Ballona Creek and Estuary regularly exceed single standard objectives for REC-1 and LREC-1 uses. The bacteria TMDL will establish substantial reductions in allowable bacteria loading, regardless of this action. REC-2 and LREC-1 water quality objectives, for “Ballona Creek” and “Ballona Creek to Estuary” respectively, are deemed protective when considering the frequency of use and the potential for ingestion of water in these reaches of Ballona Creek.

This may set a precedent for de-designation of other low-water level, concrete-lined channels.

It is important to acknowledge that de-designating Ballona Creek for REC-1 is likely to result in a precedent for de-designating other similar concrete-lined channels. There is already a request for de-designation of REC-1 in Coyote Creek and the San Gabriel River. The purpose of conducting this UAA is to ensure that the designated REC-1 beneficial use of Ballona Creek reflects the existing and potential use. Similar opportunity should be afforded other engineered channels in the region, where appropriate. It is important to determine if these designated beneficial uses have existed on or after November 28, 1975, currently exist, or could exist in future. It is a reasonable expectation that water quality standards for a waterbody reflect the potential uses that it can support.

5.3 Recommended Alternative

Staff recommends Alternative C. It serves to fully address concerns that the assigned beneficial uses reflect existing and potential beneficial uses, and it protects public health in the event of incidental contact. This alternative recognizes that the creek is slightly more accessible in Reach 2 than Reach 1. However, based on surveys and site visits, staff concludes that water contact in Reach 2 is very infrequent and the potential for incidental water ingestion is minimal due to shallow water depths. The level of protection provided for Reach 2, under this alternative, is recommended by EPA for infrequent use. The proposed amendment to the beneficial use and associated water quality objectives, only addresses the Clean Water Act swimmable goal included in the REC-1 designation.

In making this recommendation, staff has considered all factors set out in §13241 of the Porter-Cologne Water Quality Control Act:

- (a) *Past, present, and probable future beneficial uses of water.*

Public desire exists to improve recreational opportunities and aesthetics along the bike path that runs adjacent to “Ballona Creek to Estuary.” Currently, a “Ballona Creek & Trail Focused Special Study,” being conducted by Culver City, is investigating measures to enhance the bike path and provide recreational, landscaping, environmental, and other improvements along the creek. The modifications are geared towards increasing public access to the bike path and creek, while ensuring that its flood control function is not compromised. This project and future ones will be limited by the necessity to preserve the current hydrologic function of the channel in order to prevent flood damage to the surrounding highly urbanized areas. Also, limited public access - particularly during storm weather - will always need to be maintained for public safety. The Regional Board recognizes that in all probability, current and future uses of the creek will always be constrained by these factors.

- (b) *Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.*

Water quality standards are currently not being met, however the Ballona Creek and Estuary TMDL under development will address this.

- (c) *Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.*

Stormwater and urban run-off are the sources of water to the creek and are discharged through numerous storm drains. These sources have been historically difficult to control. Currently diversion and treatment of major storm drains is the most commonly identified control option, and it is not clear what impact dry-weather diversion of storm drains will have on the estuary. The recommended action may allow more flexibility in the design of the implementation plan for the bacteria TMDL.

- (d) *Economic considerations.*

With regard to economic considerations, the recommended alternative is not expected to impose any additional cost on the LACDPW or the affected cities, and may reduce costs by lowering the bacterial water quality objectives in some reaches of Ballona Creek. The change in bacteria limits in these segments may result in fewer storm drains that require diversion, along with a corresponding decrease in the potential volume of water requiring treatment. This may result in a reduced cost for water quality improvement within the creek.

- (e) *The need for developing housing within the region.*

Alternative C will have no significant impact on the need for developing housing within the region.

- (f) *The need to develop and use recycled water.*

The need to develop and use recycled water will not be affected by the proposed modifications.

The recommended alternative is also consistent with the Antidegradation Policy, as it will not lower the water quality of the creek, relative to existing conditions. In assigning water quality objectives to the limited uses that exist, this alternative fulfills the requirement of protecting the level of water quality necessary to protect existing and anticipated beneficial uses.

5.4 Future Considerations

Amending the potential REC-1 designated use of Ballona Creek, upstream of the estuary does not preclude re-designation of this use should conditions within the channel change in the future. For example, should any future improvements result in increased opportunities for water contact recreation within Reach 1 and/or Reach 2 of Ballona Creek, the REC-1 beneficial use could be restored. In the event of these changes, none of the recommended alternatives would preclude re-designating Ballona Creek as REC-1.

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